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Development of herbal sunscreen formulations from the flowers of *Osbeckia octandra* DC.

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The exposure to ultraviolet (UV) component of the solar radiation could lead to conditions like photoaging and photocarcinogenesis. Although synthetic sunscreens are introduced as protectants against harmful UV radiation, the adverse effects associated with these products demand the development of sunscreens of herbal origin. Thus, the present study focuses on the formulation of herbal sunscreens from flowers of *Osbeckia octandra* DC., a dermatological remedy in Sri Lankan folklore medicine. Initially, the UV filtering potential and subsequently the sun protection factor (SPF) was determined for the methanolic extract of *O. octandra*. Thereafter, this extract was incorporated into the aqueous cream base at different percentages (25%, 50% and 75%) and the SPF values and the photostability of the resulting formulations were evaluated against a commercial synthetic sunscreen (positive control) and the aqueous cream base (negative control). Interestingly, the crude extract displayed a SPF value of 39.91, which had hardly changed (SPF=37.38) even after incorporating this extract at 75% into the aqueous cream base. It surpassed the other two formulations as well as the commercial synthetic sunscreen in terms of SPF, photostability, and broader-spectrum of UV absorption. Therefore, this study clearly demonstrated the suitability of *O. octandra* to be developed into a commercial herbal sunscreen. Experiments are underway to enhance its bioavailability via nanotechnology approach.

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